



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/220,462

12/23/1998

CHRISTIAN G. TONNA

4167-05

3469

26584

7590

07/18/2006

OTIS ELEVATOR COMPANY
INTELLECTUAL PROPERTY DEPARTMENT
10 FARM SPRINGS
FARMINGTON, CT 06032

EXAMINER

JASMIN, LYNDIA C

ART UNIT

PAPER NUMBER

3627

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/220,462	Applicant(s) TONNA ET AL.	
	Examiner Steven B. McAllister	Art Unit 3627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-46 is/are pending in the application.
- 4a) Of the above claim(s) 22-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 and 39-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 4/4/2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites that the motor is mounted on "the front for face" of the car. It is not understood what mounting configuration is intended.

Claim 18 is indefinite because it recites "the elevator door", but claim 16 from which it depends recites "at least one elevator door".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16, 39, 43, and 45

are rejected under 35 U.S.C. 102(e) as being anticipated by O'Donnell (5,878,846).

O'Donnell shows an elevator car having a front face defining a door opening; at least one door coupled to the front face for movement between an open position exposing the door opening and a closed position covering the door opening; a first sheave 14 and second sheave 18 disposed on the front face of the car; a belt forming a closed loop between the sheaves wherein the doors are attached to the belt (not directly but via additional structure as shown in Fig. 7); at least one drive motor integrated onto one of the sheaves such that the drive motor is drivingly coupled to the belt; the drive motor having an axis of rotation perpendicular to the plane of the doors.

As to claims 39 and 45, O'Donnell shows a permanent magnet motor (col.3 , lines 45-50) disposed to the side of the sheave.

As to claim 43, the reference shows a single toothed belt.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-20, and 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tracey (5,701,973) in view of Aulanko et al (5,665,944).

Tracey shows an elevator car having a front face defining a door opening; at least one door coupled to the front face for movement between an open position exposing the door opening and a closed position covering the door opening (e.g., Figs. 1A, 1B); a first sheave 36 and second sheave 38b disposed on the front face of the car; a belt forming a closed loop about the sheaves wherein the doors are attached to the belt; at least one drive motor driving one of the sheaves 36 such that the drive motor is drivingly coupled to the belt.

Tracey does not show that the drive motor is integrated onto the sheave or that the drive motor axis of rotation is perpendicular to the plane of the elevator doors.

Aulanko shows a flat drive motor integrated onto a drive sheave. It would have been obvious to one of ordinary skill in the art to modify the apparatus of Tracey by substituting the drive structure of Aulanko in order to in order to reduce the complexity of the drive. It is further noted that in modifying the structure as taught by Aulanko, the axis of the drive motor is perpendicular to the plane of the doors.

As to claim 17, the drive motor is mounted on the front face of the car between a lower edge and an upper edge of the car (see e.g., Fig. 2, 20a being the car front fascia, col. 4, lines 7-45; col. 6, lines 55-60).

As to claim 18, Tracey shows a header mounted on the front face of the car (see the structure on which the idlers, drive sheave and motor assembly reside in Fig. 2); and that an elevator door includes a hanger spaced in front of the front face of the car; and that the motor is disposed in front of the car and behind the hanger.

As to claim 19, Tracey shows that the header is disposed below the upper edge of the car and above the door opening, extending generally between first and second sides of the car and on which the drive motor is mounted.

As to claim 20, Tracey show that the motor is disposed generally adjacent to a first (top) side of the car.

As to claims 39 and 40, Tracey in view of Aulanko shows a permanent magnet ring torque motor.

As to claim 42, Tracey in view of Aulanko shows a drive motor sized and mounted to the front face of the car so as not to intrude into the hoistway space above or below the car.

As to claim 43, Tracey in view of Aulanko show using a single toothed belt (toothed belt recited in Tracey).

As to claim 44, Tracey in view Aulanko show a motor having a rotor which serves as the sheave (see Aulanko).

As to claim 46, Tracey in view of Aulanko show a flat motor.

As to claim 41, Tracey in view of Aulanko show all elements of the claim except that the flat motor is a cycloidal gear and disc motor. However, the examiner takes official notice that it is notoriously old and well known in the art to use a cycloidal-gear and disc motor. It would have been obvious to one of ordinary skill in the art to further modify the apparatus of Tracey by providing such a motor in order to provide great torque via the cycloidal gears in a flat package.

Alternatively, as to claim 41, Tracey in view of Aulanko show all elements of the claim except that the flat motor is a cycloidal gear and disc motor. However, it would have been an obvious matter of design choice to provide an cycloidal gear and disc motor since the specification does not disclose that the style of flat motor chosen solves a particular problem or is for a particular purpose and it appears that the apparatus would function equally well with either motor.

It is further noted that if it is determined that the type of motor recited in claims 40 and 41 are not obvious variants, a species requirement will be necessary.

As to claim 45, Tracey in view of Aulanko show all elements of the claim except that drive motor is drivingly coupled and disposed to the side of the sheave. However, the examiner takes official notice that it is notoriously old and well known in the art to provide a drive motor that is drivingly coupled and disposed to the side of the sheave. It

would have been obvious to one of ordinary skill in the art to further modify the apparatus of Tracey by providing such a in order to facilitate changing of the sheave without changing of the motor.

Alternatively, as to claim 45, Tracey in view of Aulanko show all elements of the claim except that drive motor is drivingly coupled and disposed to the side of the sheave. . However, it would have been an obvious matter of design choice to provide a drive motor that is drivingly coupled and disposed to the side of the sheave since the specification does not disclose that the relationship of the flat motor to the sheave solves a particular problem or is for a particular purpose and it appears that the apparatus would function equally well with either configuration.

It is further noted that if it is determined that the type of motor recited in claims 44 and 45 are not obvious variants, a species requirement will be necessary.

Claims 16, 21, 39, 40, 41 and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (JP402081888A) in view of Aulanko (5,665,944).

Yoshikawa shows an elevator car having a front face defining a door opening; at least one door coupled to the front face for movement between an open position exposing the door opening and a closed position covering the door opening; a first sheave and second sheave disposed on the front face of the car; a belt forming a

Art Unit: 3627

closed loop between the sheaves wherein the doors are attached to the belt; at least one drive motor driving one of the sheaves such that the drive motor is drivingly coupled to the belt; the drive motor having an axis of rotation perpendicular to the plane of the doors.

Yoshikawa does not show that the motor is integrated onto one of the sheaves.

Aulanko shows integrating the motor onto the sheave. It would have been obvious to one of ordinary skill in the art to modify the apparatus of Yoshikawa by adding the flat motor integrated onto one of the sheaves in order to reduce complexity of the system, save space, and avoid the failure mode of having the drive belt 9d fail.

As to claim 21, Yoshikawa in view of Aulanko shows all elements of the claim.

As to claim 39, Yoshikawa in view of Aulanko shows a permanent magnet motor.

As to claim 40, Toshikawa in view of Aulanko shows a permanent magnet ring torque motor.

As to claim 43, Yoshikawa in view of Aulanko show using a single toothed belt.

As to claim 44, Yoshikawa in view Aulanko show a motor having a rotor which serves as the sheave (see Aulanko).

As to claim 46, Yoshikawa in view of Aulanko show a flat motor.

As to claim 41, Yoshikawa in view of Aulanko show all elements of the claim except that the flat motor is a cycloidal gear and disc motor. However, the examiner takes official notice that it is notoriously old and well known in the art to use a cycloidal-gear and disc motor. It would have been obvious to one of ordinary skill in the art to

further modify the apparatus of Yoshikawa by providing such a motor in order to provide great torque via the cycloidal gears in a flat package.

Alternatively, as to claim 41, Yoshikawa in view of Aulanko show all elements of the claim except that the flat motor is a cycloidal gear and disc motor. However, it would have been an obvious matter of design choice to provide an cycloidal gear and disc motor since the specification does not disclose that the style of flat motor chosen solves a particular problem or is for a particular purpose and it appears that the apparatus would function equally well with either motor.

As to claim 45, Yoshikawa in view of Aulanko show all elements of the claim except that drive motor is drivingly coupled and disposed to the side of the sheave. However, the examiner takes official notice that it is notoriously old and well known in the art to provide a drive motor that is drivingly coupled and disposed to the side of the sheave. It would have been obvious to one of ordinary skill in the art to further modify the apparatus of Yoshikawa by providing such a in order to facilitate changing of the sheave without changing of the motor.

Alternatively, as to claim 45, Yoshikawa in view of Aulanko show all elements of the claim except that drive motor is drivingly coupled and disposed to the side of the sheave. However, it would have been an obvious matter of design choice to provide a drive motor that is drivingly coupled and disposed to the side of the sheave since the

specification does not disclose that the relationship of the flat motor to the sheave solves a particular problem or is for a particular purpose and it appears that the apparatus would function equally well with either configuration.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

To the extent that Applicant's arguments are relevant to the present rejections, the arguments filed 4/4/2006 have been fully considered but they are not persuasive.

Applicant argues that one would not combine Aulanko with the any art of record since Aulanko shows a different type of sheave allegedly incompatible with a belt. The examiner respectfully disagrees because Aulanko is not being used to teach the particular type of sheave, but is being used to teach the relationship between the sheave and the motor. The appropriate type of sheave is already provided by the base reference.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven B. McAllister whose telephone number is (571) 272-6785. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander G. Kalinowski can be reached on (571) 272-6771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Steven B. McAllister

Steven B. McAllister
Primary Examiner
Art Unit 3627

STEVE B. MCALLISTER
PRIMARY EXAMINER